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Takamasa Ishii

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EXAMINER

IGYARTO, CAROLYN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,349	Applicant(s) ISHII ET AL.	
	Examiner CAROLYN IGYARTO	Art Unit 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>29 Nov. 2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 7 January 2008 was accepted and entered. Accordingly, changes have been made to the specification. Claims 1-8 and 10-14 have been amended. Claims 15-19 have been newly added. No claims have been cancelled. Thus, claims 1-19 are currently pending in this application.
2. Applicant has adequately amended the specification to overcome the drawing objections regarding reference characters B, Rs1, Rs2, and C2'. Therefore, the previous objection made to the drawings in section 4 of the previous office action, mailed 09/06/2007, has been withdrawn.
3. Not all specification errors have been address. The amendment to the specification is sufficient to overcome the previous objections made to page 16, line 1; page 19, lines 4 and 11; and page 24, lines 2 and 4. Therefore the objections made to the specification in sections 8-10 of the previous action, mailed 09/06/2007, have been withdrawn. The remaining objections to the specification are repeated below.
4. In view of the amendment, received 7 January 2008, all previous objections made to the claims have been withdrawn.

Response to Arguments

5. Applicant's arguments filed 7 January 2008 have been fully considered but they are not persuasive.

6. Applicant argues that Fig. 1 should not be labeled prior art. Applicant does not show how the structure shown in Fig. 1 differs from the structure shown in Fig. 11.

Therefore, the objection to Fig. 1 is repeated below.

7. Applicant argues that Sauer teaches each one of the plural pixels has one signal wiring, implying that Sauer teaches the pixels to be coupled to only one signal wiring. The Examiner respectfully disagrees. The pixels taught by Sauer are coupled to a second signal line, the output signal line. See Fig. 1.

Information Disclosure Statement

8. The information disclosure statement (IDS) submitted on 29 November 2007 has been considered by the Examiner and made of record in the application file.

9. The miscellaneous incoming letter, received 25 January 2008, stating the attachment of a translated Japanese document was received. This reference has not been considered by the examiner, because it has not been properly presented in an IDS.

Specification

10. The disclosure is objected to because of the following informalities:
11. Section headings should be in upper case.

Drawings

12. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. Figure 1 appears to have the same structure as Figure 11, which is described as being a conventional structure.

Claim Objections

13. Claim 1 is objected to because of the following informalities: line 7 recites "said pixel", which lacks antecedent basis. Previously "each of the pixels" has been recited and "pixels" has been recited, but reference to a single pixel has not been previously made. Appropriate correction is required.

14. Claim 12 is objected to because of the following informalities: line 14 recites “the plurality of radiographing modes”, which lacks antecedent basis. Appropriate correction is required.

15. Claim 19 is objected to because of the following informalities: line 2 recites “the operation control” and line 3 recites “the radiographing” both lack antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

16. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

17. Claims 8, 10, 12, 16, and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. “an operation control” and “glass substrate” are not adequately described by the original disclosure.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 1-6 and 8-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Sauer et al. (US 5,973,311), hereinafter referred to as Sauer.

20. With respect to **claim 1**, Sauer teaches a radiation image pick-up device (col. 1, lines 21-22, 50-54, and 65-67) comprising:

a plurality of pixels disposed in matrix, each of the pixels including at least one photoelectric conversion element for converting incident radiation into electric charges (col. 4, lines 17-18);

a scanning circuit for scanning said pixels (48); and

a signal output circuit for outputting signals from said pixels (signal output circuit

includes: the circuitry of signal lines 1 and 2, row select lines 1 and 2,

column select line 1, output signal line, shift registers 48 and 50, and low resolution switch 24), said radiation image pick-up device being

characterized in that a plurality of signal reading wirings through which said pixel and said signal output circuit are connected to each other are

provided for each pixel (col. 4, lines 34-66), and in that each of said pixels

includes semiconductor elements (photodetector P11; transistors TC11 and TR11; col. 1, line 10) connected to each of said signal reading wirings

(Fig. 1), each of said semiconductor elements is selected by controlling an

operation of said scanning circuit (col. 6, lines 54-65), and each of said

signal reading wirings is selected based on an actuation of at least one semiconductor element by scanning circuit (col. 2, lines 23-25; col. 4, lines 64-66).

21. With respect to **claim 2**, Sauer teaches the photoelectric conversion element includes a wavelength conversion member for performing wavelength conversion on incident radiation (col. 13, lines 33-36).

22. With respect to **claim 3**, Sauer teaches the signal reading wirings is selected based on actuation of the semiconductor elements by the scanning circuit according to a dosage of the radiation (col. 1, lines 50-53 and 65-67; col. 2, lines 23-24; col. 4, lines 64-66).

23. With respect to **claim 4**, Sauer teaches at least one of the semiconductor elements is a source follower (col. 2, lines 15-21).

24. With respect to **claim 5**, Sauer teaches a signal reading circuit for reading out a signal from the pixel is provided to each of the signal reading wirings (col.7, lines 39-48).

25. With respect to **claim 6**, Sauer teaches a signal reading circuit for reading out a signal from the pixel is provided in common to the signal reading wirings (col.7, lines 39-48).

26. With respect to **claim 8**, Sauer teaches a radiation image pick-up method (Abstract) comprising:

using a device which includes a plurality of pixels disposed in a matrix, each of the pixels including at least one photoelectric conversion element for converting incident radiation into electric charges (col. 4, lines 17-18), a scanning circuit for scanning the pixels (col. 6, lines 54-65), and a signal output circuit for outputting signals from the pixels (signal output circuit includes: the circuitry of signal lines 1 and 2, row select lines 1 and 2, column select line 1, output signal line, shift registers 48 and 50, and low resolution switch 24),

the radiation image pick-up method being characterized in that a plurality of signal reading wirings through which the pixel and the signal output circuit are connected to each other are provided for each pixel (Fig. 1) and in that each of the pixels includes semiconductor elements (photodetector P11; transistors TC11 and TR11; col. 1, line 10) connected to each of the signal reading wirings(Fig. 1), and an operation control of the semiconductor elements is performed by the scanning circuit, so as to select, the corresponding pixel, one signal reading wiring from the plurality of signal

reading wirings connecting the one of the pixels with the signal output circuit, and so as to use the selected one signal reading wiring for the one of the pixels, according a radiographing mode(col. 2, lines 23-25; col. 4, lines 64-66; col. 6, lines 54-65).

27. With respect to **claim 9**, Sauer teaches the photoelectric conversion element performs wavelength conversion on incident radiation (col. 13, lines 33-36), and converts the conversion results into electric charges (col. 1, lines 21-26).

28. With respect to **claim 10**, Sauer teaches each of the signal reading wirings is selected based on the operation control of the semiconductor element by the scanning circuit according to a dosage of the radiation (col. 1, lines 50-53 and 65-67; col. 2, lines 23-24; col. 4, lines 64-66; col. 6, lines 54-65).

29. With respect to **claim 11**, Sauer teaches each of the pixels includes semiconductor elements connected to the plurality of signal reading wirings (col. 4, lines 34-66), and at least one of the semiconductor elements is a source follower (col. 2, lines 15-21), and the scanning circuit performs the operation control of the semiconductor element such that (low resolution fluoroscopy mode; col. 4, lines 62-64), when the dosage of the radiation is small in the radiographing, the signal reading wiring connected to the source follower is selected (col. 4, line 67 and col. 5, lines 1-4).

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30. With respect to **claim 12**, Sauer teaches a radiation image pick-up system, characterized by comprising:

a radiation image pick-up device (col. 1, lines 21-22, 50-54, and 65-67)

comprising a plurality of pixels disposed in a matrix, each of said pixels including at least one photoelectric conversion element for converting incident radiation into electric charges (col. 4, lines 17-18); and a signal output circuit for outputting signals from the pixels (signal output circuit includes: the circuitry of signal lines 1 and 2, row select lines 1 and 2, column select line 1, output signal line, shift registers 48 and 50, and low resolution switch 24), said radiation image pick-up device being wherein, a plurality of signal reading wirings through which the pixel and said signal output circuit are connected to each other are provided for each pixel (col. 4, lines 34-66), and in that each of the pixels includes semiconductor elements (photodetector P11; transistors TC11 and TR11; col. 1, line 10) connected to each of the signal reading wirings (Fig. 1);

radiation generation means for applying radiation (inherently a source of x-rays would be included; col. 13, lines 31-36);

selection means for selecting any one of the plurality of radiographing modes of said radiation image pick-up device according to magnitude of a dosage of radiation (col. 1, lines 50-53 and 65-67; col. 2, lines 23-24; col. 4, lines 64-66); and

control means for controlling the application of the radiation by said radiation

generation means and drive of said radiation image pick-up device based

on said selection by the selection means (inherently a controller for

controlling the x-ray source and the image pick-up device would be

included; col. 1, lines 65-67), wherein said semiconductor elements are

selected by an operation control of said control means, and said signal

reading wiring is selected based on the operation control of said

semiconductor elements by said control means (col. 1, lines 50-53 and 65-

67; col. 2, lines 23-24; col. 4, lines 64-66; col. 6, lines 54-65).

31. With respect to **claim 13**, Sauer teaches a photographing switch with which any one of the plurality of radiographing modes is selectable based on an input by an operator (col. 4, lines 62-66; inherently this switch is based on the input of the x-ray system operator), said radiation image pick-up system being characterized in that said selection means selects any one of the radiographing modes based on input made with said photographing switch (col. 4, lines 64-66).

32. With respect to **claim 14**, Sauer teaches the photographing switch is adapted to be switched ON into a plurality of strokes (on or off of the low resolution switch 24) corresponding to the number of the signal reading wirings (signal line 1 and signal line 2), and the respective strokes correspond to an increase in dosage of radiation in ascending order (col. 1, lines 50-53 and 65-67).

33. With respect to **claim 15**, Sauer teaches said plurality of pixels are arranged on a substrate (col. 5, lines 9-20).

34. With respect to **claim 17**, Sauer teaches at least one of said semiconductor elements is a switch element for transferring a signal based on the electric charge generated by a photoelectric conversion by said photoelectric conversion element (col. 6, lines 3-10).

35. With respect to **claim 18**, Sauer teaches that said source follower is a switch element (col. 2, lines 15-30; col. 6, lines 3-10) for transferring a signal produced by amplifying the electric charge generated by a photoelectric conversion by said photoelectric conversion element (col. 6, lines 30-40).

36. With respect to **claim 19**, Sauer teaches said scanning circuit performs the operation control of said semiconductor element such that (low resolution fluoroscopy mode; col. 4, lines 62-64), when the dosage of the radiation is small in the radiographing, said signal reading wiring connected to said source follower is selected (col. 4, line 67 and col. 5, lines 1-4).

Claim Rejections - 35 USC § 103

37. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

38. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al. (US 5,973,311), hereinafter referred to as Sauer, as applied to claim 1 above, and further in view of Hamamatsu Photonics K.K. (WO 03/049190), using Sugiyama et al. (US 2004/0195490) as a translation, hereinafter referred to as Sugiyama.

39. With respect to **claim 7**, Sauer teaches all of the limitations of claim 1, as explained above. If it is held that Sauer does not teach two signal reading circuits are provided. Sugiyama teaches using two signal processing circuits or reading circuits for the benefit of achieving a faster detecting process (Fig. 21; [0005]). Therefore, it would have been obvious to one of ordinary skill at the time of the invention to include two signal reading circuits, as taught by Sugiyama, in the invention taught by Sauer for the benefit of achieving a faster detecting process.

40. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer. Sauer teaches all of the limitations of claims 1 and 15, as explained above. Sauer does not explicitly disclose the substrate to be made of glass. However, glass is a well known material to make a substrate. Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to use glass as the material for the substrate, as a person with ordinary skill has good reason to pursue the known options within his/her technical grasp.

Conclusion

41. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAROLYN IGYARTO whose telephone number is (571)270-1286. The examiner can normally be reached on Monday - Thursday, 7:30 A.M. to 5 P.M. E.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CI

/David P. Porta/
Supervisory Patent Examiner, Art Unit 2884